



NOAA Teachers at Sea
Vince Rosato and Kimberly Pratt
Onboard NOAA Ship RONALD H. BROWN
March 9 - 28, 2006

Log 2

Science Log: CTD (Conductivity, Temperature, Depth) Test Cast

Date: 3/13/06

Location: Due East of Abaco Island

Vince Rosato



The "Package"

We learned what to do to help the scientists today. In other words, all science personnel were trained in CTD Data Acquisition Procedures. "The package," is what we send down to the bottom, about 5600 meters, more than three miles deep. The package, or CTD, is mostly a rosette of 23 cylinders, (specially machined thick PVC tubes). It is deployed, or lowered, overboard. A winch, a machine run by trained sailors, does

this lowering. It has a strong wire and pulley to lift and put the package into the ocean. Once on the surface of the ocean, the CTD was lowered to 10 meters, to get the air out of the system. The distance of 10 meters is where the atmospheric pressure doubles. The CTD is then returned to the surface. We bring it back to the surface after getting all the bubbles out, in order to mark the winch line to zero so they know how far away the bottom is. Not only is the winch line zero, but the software begins at a good water only profile level as well. All the tubes are open in the rosette on the way down so they do not burst with the pressure and they can collect water at various depths on the way back up from the bottom. On the way down water passes right through the open tubes. The procedure for lowering the package with the commands is given by the survey crew to the winch operator. They are simple and brief, explained Jonathan Shannahoff, the Chief Survey Technician, who along with the Chris Churylo, the Chief Electronics Technician, are in charge of the use of all the electronic equipment onboard.

So we followed a very detailed procedure of lowering the package to the depth of 2,000 meters and popped the tubes, closed the tubes on the rosette, thus collecting water samples at the depth of 2,000 meters. This was a test cast. It was brought to the surface and we practiced taking various samples from the water. Kim got to do the salinity and nutrient samples and Vince got to work with Dr. Shari Yvon-Lewis, CFC Project Lead, and Julia O'Hern, post-graduate CFC analyst, with the trace element samples. Each type of sample has a procedure to follow to make sure it is done in the same manner so no mistakes are made with the data. The first actual data collection casts will be coming up on Monday. We expect to do 55 or so casts and make more than 20 samples from each cast. Yes, today was all practice. We labeled vials and sample bottles to make them more orderly. The scientific process requires that you replicate experiments, which means that someone else can do the same thing as we do under similar conditions and get the same results. Without that procedural similarity, reliability of data is compromised. In other words, if you don't do the same thing you did the last time you did it, you may not get the same conclusions.

Interview with Captain Gary Petrae

When you enter the bridge of the RON BROWN, you probably will meet Captain Gary Petrae. Captain Petrae has spent over 27 years with the NOAA Corp. He joined NOAA after graduating from Florida Institute of Technology where he majored in physical oceanography. Captain Petrae chose NOAA because he likes adventures and loves a challenge. His favorite ports are Barbados W.I., Kodiak AK, and San Diego, CA. When he's not on duty, he catches up on paperwork, reads, and watches movies. He encourages



Captain Gary Petrae on the bridge of the RON BROWN

all his staff and crew to stop and relax and he tries to practice this daily himself.

CAPT Petrae really enjoys his commission, but does admit that the family separation is difficult. He encourages anyone to join NOAA and you can apply with a college degree to the commissioned corps, or in an entry-level position with a high school diploma. A great benefit for NOAA employees is that you can live on-board

a ship, (don't have to pay rent), eat three meals a day and you can see the world. If you'd like more information about joining NOAA – go to their website www.noaa.gov

This is CAPT Petrae's first command upon the RON BROWN which is a class one research vessel that travels all over the world. The RON BROWN measures 274 feet stem to stern, is 52.5 feet wide, and needs 20 feet of water in which to operate. The RON BROWN uses diesel fuel and has six generator motors. The ship makes its own water using an evaporation system.

The RON BROWN is scheduled to go to Brazil later in the year, and CAPT Petrae with his love of adventure is ready to go!

Personal Log – Vince Rosato

Date: 3/11/06

You may reach me onboard by email at vince.rosato@rbnems.ronbrown.oma.noaa.gov

You have asked, what is it like on the ship? The cabin I'm in has two bunks and two wall cabinets with closet space and drawers and one tall metal Chester drawer all of which I share with my cabin mate Ho, a doctoral student from the UK. I have the bottom bunk and I work the noon-midnight watch. He has the midnight to noon watch, which means each of us gets the room to ourselves for the time we're not on watch. We share the bathroom that has a fixture and shower stall with our adjacent cabin. When we use it we lock both entry doors and remember to unlock them when we leave. There is a sink with a mirror in each cabin as well. The room has two sofa-like chairs and a stool that can be used like a desk chair next to the Chester drawers that has a pullout section that acts like a desktop. In each double size bunk there are drapes around three sides since one side faces the metal wall. They shield the light in either direction because there is a bunk light with an outlet inside. All in all the cabins are practical and spacious and we are in charge of keeping them neat and tidy. Speaking of tidy, I did my laundry today two decks below.

Personal log – Kimberly Pratt

Hi all. The weather is beautiful. I've spent the last two days doing interviews, taking pictures and forming friendships on board the RON BROWN. Yesterday I was trained in CTD collection procedures and really felt like a scientist as I got to take samples. I'll be processing salinity samples as well as non-organic nutrients. The ship has stopped rocking and rolling so seasickness is at bay. Today I really go to work, collecting samples as my shift is from noon to midnight. The crew and officers have been very helpful and friendly. It's been going really well, and it's nice to have a fellow teacher on board!